NEXT COMPUTING

CASE STUDY

A Customized Sports Broadcast Solution

NextComputing was approached by the largest US-based sports broadcast network for an all-in-one, high-performance computer that would allow them to run their real-time broadcast graphics and data applications from their mobile production studios. The request was simple, but the constraints were many, and the features necessary to fulfill all of their needs would be a challenge. Issues of concern included excessive shipping costs as well as risk of damage to equipment, portability needs that were not being met, lack of system durability, and a lack of personalized support for the systems being used. NextComputing set out to fulfill all of these requirements, and then some.

With millions of viewers tuning into the network's programming daily, and many differing applications going on simultaneously, such as telestration or clock-and-score, maximum flexibility and powerful processing were necessary.

"What they needed was a powerhouse of a system, customizable for their purposes of broadcasting high-profile sports games with interactive elements, yet the system could not be very big, as space inside these mobile studios is limited," relates NextComputing's Broadcast Sales Manager, Aaron Sherman.

Problem Scenario

In the past, laptops have often been used in this implementation, due to their small size and portability. However, as content has increased in complexity, laptops have had difficulty keeping up. Ideally, the system used could work as a server, holding up to multiple simultaneous operations. The graphics being generated are sophisticated, and require interaction, i.e. different content to different viewers. Laptops simply cannot handle the load and performance expectations. They also lack PCI and PCIe slots, a must since applications like this often utilize multiple cards, including a video I/O card like the AJA Kona card, and a GPU such as an NVIDIA Quadro or GeForce card. As an alternative to PCIe slots, some newer laptops have Thunderbolt ports, a high-speed PCIe connection, making expansion possible for any additional I/O. However, even the fastest Thunderbolt connection is not even close in performance to full-sized PCIe slots. In addition, laptops lack the needed architecture to function as a server for multiple simultaneous operations.

Overview

- **Our customer needed high-performance systems for broadcast graphics in mobile studios**
- **They sometimes used laptops for their small size, but they couldn't get the performance they needed**
- **Shipping large, stationary equipment was problematic as well**
- **NextComputing implemented Radius EX all-in-one portable workstations**
- **Workstations featured:**
  - **Intel Xeon 6-Core processor**
  - **NVIDIA Quadro K4000**
  - **AJA Kona 3G card**
  - **Integrated 17" display**
  - **Several customized features**
  - **Rugged case for safe transport**

Another alternative the customer was using to fulfill their needs as best they could, was to ship more powerful, stationary equipment from site to site. This proved to be very expensive and risky, as this equipment was not designed for repeated shipping and often broke or got damaged in transit, requiring repairs or replacement once it reached its destination. This larger equipment, when working, was problematic for its size as well. The space constraints of the mobile studios prohibited much of the needed equipment, or forced other equipment out of the vehicle in order to make room.

Solution

NextComputing implemented portable workstations from their Radius line. One system is capable of running multiple applications, streaming live video flawlessly, fitting into tight spaces, and with its ruggedized case, ships safely and cost-effectively to any location. Several hundred Radius EX portable workstations are now out in the field being used to broadcast your favorite football games, baseball games, and hockey, to name a few. To solve all of the customer's implementation issues, NextComputing provided them with the following configuration:

- Intel Xeon 6-core processor for plenty of power to flawlessly run multiple, simultaneous broadcast applications
- NVIDIA Quadro K4000 card for much higher graphics performance than laptops could provide
- AJA Kona 3G video I/O card for capturing and sending HD-SDI video
- Integrated 17-inch display, effectively making the Radius EX an all-in-one system, alleviating the need for shipping a separate monitor
- Several customized features for this industry, with a mounted modem for tying into external data feeds, serial port for connecting to scoring system data feeds, and a proprietary custom I/O plate giving the customer easy access to all of their needed broadcast video connectors
- A rugged case with custom openings fitted for the Radius EX, two laptops, and lots of cabling, which lessened shipping costs and the risk of equipment damage for the customer

Summary

Today, you can find NextComputing's Radius EX systems being utilized to manage graphics and video for the Super Bowl and The World Series, and for just about any of your favorite sporting events. NextComputing builds the perfect systems for mobile video production, and offers benefits over and above its competitors, such as highly-responsive personalized customer support and OEM services for developing and branding your own solutions. Once customers have used the portable Radius line, they never want to go back to stationary systems or laptops.

Explore nextcomputing.com to learn more, or contact us to discuss how NextComputing can create your perfect solution!

Rounding out the already robust Radius line of portable workstations, NextComputing also offers the Radius Live, specifically tailored to the broadcast and digital media industries' needs, yet fully customizable for your specific application. It has a quieter acoustic footprint, greater storage flexibility, and a 5 ¼ drive bay for additional I/O.